REMARKS

In the Office Action, dated October 27, 2008, the Examiner states that Claims 1-4 and 6 are pending and rejected. By the present Amendment, Applicant cancels Claims 1 and 3.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. (US 6,416,904) in view of Kaido et al. (US 6,284,405). Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. in view of Kaido et al. and Fukumura et al. (US 6,027,835).

Solely in the interest of advancing prosecution and without prejudice or disclaimer of the subject matter thereof, Applicant cancelled Claims 1 and 3 rendering the rejection of these claims moot. As such, Applicant respectfully requests withdrawal of the rejections of Claims 1 and 3 under 35 U.S.C. 103(a).

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. in view of Kaido et al. and Meyering et al. (US 2001/0017280) for the reasons of record. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. in view of Kaido et al., Meyering et al., and Fukumura et al. Applicant respectfully disagrees with and traverses these rejections.

The method for producing an electrode plate for a battery according to the present invention employs a method in which, after an electrode active material layer coating composition is applied intermittently onto a first side and dried to form intermittently coated sections, a second side is subjected to the same procedures to form intermittently coated sections thereon, while the both sides are consecutively prepared in the same conveying direction. Due to thie foregoing feature of the present invention, the starting sides (edges) of the intermittently coated sections are allowed to face each other on the both sides of a support, the shape and distance of the intermittently coated sections are optimized, and a protuberance on the first side and that on the second side join together to provide substantially only one unit of increased thickness (one thicken portion) to a pair of the intermittently coated sections on the first and second sides. Tension is thus evenly applied on both sides of a collector during pressing, resulting in an advantageous effect that an electrode plate which can prevent the electrode active material layers from chipping, dropping or other damages and the collector from breaking or other damages.

As stated in the Office Action, Reimer et al. and Kaido et al. fail to teach that the intermittently coated sections are formed on either side consecutively in the same conveying direction.

The technique of Meyering et al. is for obtaining a reinforced, continuous geometrically, symmetrical microporous filtration membrane, in which a resin solution is coated onto both sides of support material at the same time and is solidified by bringing both of the coated sides simultaneously into contact with a quench solution in a quench bath. The production method disclosed in Meyering et al. comprises a step of coating both sides simultaneously and consecutively, and a step of drying both sides simultaneously. In the apparatus shown in FIG. 2 of Meyering et al., as also discussed in paragraph [0051], the first die 40 is simply used for pressure impregnating the substrate material, and the opposed second and third dies 42 and 44, which are faced to each other, are used for coating both sides substantially simultaneously. In Meyering et al., as also disclosed in paragraph [0055], dies used for coating both sides are preferably disposed essentially directly opposite to one another. That is, in Meyering et al., it is simply disclosed to coat both sides simultaneously and consecutively. The term "continuous" used in Meyering et al. is a concept opposed to the term "intermittent" in "intermittent coating," which was used to express "continuous layer."

Meyering et al. does not teach or suggest the use of the following two steps: a step of applying a coating compositor intermittently to a first side of a collector by mans of a coating means, which is capable of consecutively subjection first and second sides of a support material to intermittent coating process in the same conveying direction, and then drying; and a step of applying, consecutively after drying the first side without winding of the collector and stopping, a coating composition intermittently to the second side of the collector, wherein a running direction of the coating process for the second side is directed toward the same direction as the coating process for the first side, and then drying. The step of coating both sides simultaneously and consecutively according to Meyering et al. is completely different from the step specified in Claim 2 of the present invention, in which after a coating composition is applied intermittently onto the first side and dried to form intermittently coated sections, a second side is subjected to the same procedures to form intermittently coated sections thereon, while both the sides are

consecutively prepared in the same conveying direction.

Applicant respectfully asserts that the following assertion, taken from the present Office Action, is incorrect:

"Meyering et al. further teach coating both sides of the substrate consecutively (Figure 2, abstract). It would be desirable to coat both side of the substrate of Reimers et al. in view of Kaido et al. consecutively, such as taught by Meyering et al., since such a method would reduce manufacturing time by combining two steps into one. The method of Meyering et al. could be performed to suit the limitations of Reimers et al. in view of Kaido et al, specifically that there be distinct coated areas, since the coating injection apparatus of Reimers et al. and Kaido et al. (14 Figure 1 of Reimers et al. or 12 of Figure 1 of Kaido et al.) is analogous to 60, 62, 64 in Figure 2 of Meyering et al."

Applicant respectfully asserts that even if the method of Meyering et al. for coating both sides simultaneously and consecutively would reduce manufacturing time and thus be desirable, it is not acceptable to coat both sides of the substrate according to Reimers et al. or Kaido et al. simultaneously. This is because although the method of Meyering et al. is suitable for conducting a consecutive coating for forming a symmetrical, continuous layer on both sides of a substrate, it is not appropriate when intermittently coating both sides of a substrate as that of Reimers et al or Kaido et al. Also, in the method of simultaneously coating both sides of a substrate without drying each, the clearance between a coating head and substrate is not stable, thus coating accuracy cannot be achieved in the process of intermittent coating. Furthermore, it is not possible to achieve such coating accuracy that intermittently coated sections formed on both sides are shifted only by an optimized value. Because of these reasons, the technique according to Meyering et al. teaches away from Reimers et al., Kaido et al. and the present invention.

Even if both sides of the substrate of Reimers et al. or Kaido et al. are simultaneously coated as taught in Meyering et al., since the method of Meyering et al. for coating both sides of a substrate simultaneously and consecutively would, as the Office Action remarked, reduce manufacturing time and thus be desirable, the coating method of Meyering et al. is an absolutely different production method from a step as specified in Claim 2 of the present invention, in which the first side of a substrate is intermittently coated and dried, and consecutively after drying the first

side without even a pause or stopping, the second side is intermittently coated and dried in the same direction as that of the first side. Therefore, the coating method of Meyering et al. would not lead to the steps in Claim 2 of the present invention.

Moreover, the figures of Reimers et al. show that as the staggered edges on the web, peaks (leading edges/trailing edges, e.g. 2b/3b in Fig. 3c) of the bumps at the edges of the first and second side segment coatings result in forming two independent protuberances, and one intermittently coated section has one unit of increased thickness at each edge (that is, a total of two units and four independent protuberances, e.g. 2b/3b and 2a/3a in Fig. 3c). Consequently, chipping or dropping of the coating (electrode active material layer) is more likely to occur in Reimers et al. than in the production method according to the present invention, in which each intermittently coated section is allowed to have substantially only one unit of increased thickness and only one independent protuberance. Even though intermittently coated sections shown in Fig. 10B of Kaido et al. are shifted (staggered), peaks of the protuberances on the first and second side coating layers result in forming two independent protuberances. Thus, chipping or dropping of the coating layer (electrode active material layer) is more likely to occur than in the production method of the present invention.

The use of the production method according to the present invention makes it possible to produce an electrode plate with lower production cost and satisfactory yield. Moreover, the electrode plate thus produced is more effective in preventing electrode active material layers from chipping, dropping and other damages, and a collector from breaking and other damages. Such advantageous effects are not predictable from Reimers et al., Kaido et al. and Meyering et al.

Accordingly, Applicant respectfully requests withdrawal of the rejection of Claims 2, 4 and 6 under 35 U.S.C. 103(a).

In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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